



DEPARTMENT OF WATERSHED  
MANAGEMENT (DWM)  
**INTERIM STANDARD OPERATING  
PROCEDURE**

**Commented [A1]:** All the below comments should be reflected in the "Capacity flowchart"

SOP TITLE:	Interim Sanitary Sewer Capacity Certification SOP
SOP NUMBER:	CD-SOP-001
SOP OWNER (Division/Office):	Infrastructure Acquisitions Program
SOP APPROVAL:	DCCO/Infrastructure
SOP LAST REVIEWED / UPDATED DATE:	12/15/2017
SOP REVISION NUMBER:	1

#### I. PURPOSE

The purpose of this Interim Standard Operating Procedure (SOP) is to standardize the process for determining whether or not sanitary sewer capacity can be acceptably assured to convey additional sewage flow. Sufficient capacity is defined by County policies regarding acceptable system conditions and levels of service which are referenced in the Procedures section of this document. This SOP is to be used until the County either adopts a capacity assurance program or a fully dynamic hydraulic model is developed.

**Commented [A2]:** This SOP should include specific definitions and parameters for adequate collection, treatment and transmission capacity of wastewater in the service area. Acceptable definitions are provided in the Comments on the Interim Capacity Evaluation Program.

#### II. SCOPE

Effective December 20, 2017, Sanitary Sewer Capacity Certification is required for new connections and increases in flows by any entity, public or private into the DeKalb County wastewater collection and transmission system (WCTS).

This SOP will be utilized by internal staff in Planning and Development, Hydraulic Modeling, Flow and Rainfall Monitoring, and County representative as needed to certify sewer capacity to the applicant.

#### III. PREREQUISITE

- DeKalb County Interim Sanitary Sewer Capacity Evaluation Program
- Sewer Capacity Evaluation Request Form
- Capacity Letters Tracking Master Sheet
- Capacity Analysis Form
- Capacity Allotment Master Sheet
- Template Standard Capacity Letter

#### IV. RESPONSIBILITIES

- **Planning and Development (P&D) within DWM:** Communicate with Applicant, ensure required documentation is complete and accurate prior to initiating process to set up a project, initiate process.
- **Modeler:** Model capacity, identify locations for flow monitoring, flow monitoring data analysis, and communicate.
- **Administrative Support:** Maintain electronic and paper records, update as necessary and communicate.
- **Flow Monitoring Personnel:** Install monitors at locations as requested; calibrate and maintain for the designated period; notify modeler when required period of data are available on Flowlink Server; and communicate and document.
- **Geographic Information System (GIS) Personnel:** Provide survey confirmation support when requested and provide updated GIS files routinely for update of Hydraulic Model.
- **Capacity Certification Engineer:** County staff or consulting engineers who are licensed professional engineers in the State of Georgia who evaluate capacity requests and provide certification on behalf of the County.
- **Consent Decree Administrator:** Provide review of capacity improvement solution to determine whether the solution complies with the Consent Decree, County's policies, best practices, and goals.
- **Responsible Party of the County:** Provide approval of capacity certifications made by the Capacity Certification Engineer.
- **Deputy Chief Operating Officer for Infrastructure:** Provide review and approval of Applicant's appeal of County's denial of Sewer Action Plan. The appeal process will adhere to the terms of the Consent Decree.

**Commented [A3]:** For audit purposes we would like to be able to examine original paper copies of field recordings as appropriate.

**Commented [A4]:**

**Commented [A5R4]:** The language here needs to be clarified to indicate that the consulting engineer is hired by the county and has full access to all the necessary information needed to provide certification.

**Commented [A6]:** Included here or elsewhere is the need to state that the process used and full documentation of how the engineer arrived at capacity certification should be available for EPA/EPD and/or other external auditors.

**Commented [A7]:** Approval cannot be given without a documented technical basis and must be consistent with the terms of the Consent Decree. No approval should be given by the Deputy Chief Officer without certification of capacity by a Georgia PE.

#### V. PROCEDURES

##### EVALUATION AND APPROVAL PROCESS

An overview of the capacity request evaluation and approval process is provided with the attached flow chart. The numbers and letters associated with the evaluation steps presented below correspond with those indicated on the flow chart.

While many of the evaluation steps below describe specific parameters for the County evaluating capacity, engineering judgment shall be used in all evaluations. As such, it is considered acceptable, in unique situations, to adjust a parameter based upon documented reasoning so long as the County's capacity certification is approved by a registered Georgia Professional Engineer.

##### Activities 1-4: Applicant Submittal of and County Verification of Sewer Capacity Request (SCR) Form

The Sewer Capacity Evaluation Request (SCR) form shall be completed and submitted by all entities, public or private, proposing to discharge new or modified flows into the DeKalb County Sewer System. A copy of the County's SCR completion instructions and supporting documentation will be available to the applicant.

P&D shall review the SCR form to determine completeness and to verify compliance with the Capacity Evaluation Program and Procedures. Verification shall include the following:

- Confirmation that the calculated design flow rates provided conform to the standard design flow rates for various contributor classifications as provided by the County (See Appendix B, Table 1 of the County's SCR form). The County will consider alternative flow contribution rates if the applicant provides supporting documentation. For contributors not listed in Appendix-B, Table 1 of County's SCR, P&D shall confirm the suitability of the design flow rates provided. The County may or may not accept the alternate flow rates

provided. P&D shall further confirm that the peak flow rates determined by the applicant meet the requirements of the SCR.

- Confirmation that the SCR has been signed and sealed by a professional engineer registered in the State of Georgia for all SCR's except those applications with design average daily flow rates exclusive of any offsets or allowances which exceed 500 gallons per day.

**Commented [A8]:** Does this refer to "average daily flow rates" or to "offsets or allowances"?

#### **Decision A: SCR Completed Per Program and Procedural Requirements**

If the SCR is complete and verified, it shall be so noted by P&D and shall proceed to Activities 5A and 5B below. Otherwise, the completeness and verification issues shall be noted and the form shall be returned to the applicant for correction and resubmission.

Verified SCR's shall be recorded into the Sewer System Capacity Allotment Tracking Form and their status shall be designated as PENDING.

Deductions in design peak flow rates resulting from developments with properties that have discontinued or reduced discharges to the WCTS shall also be included to the Sewer System Capacity Allotment Tracking Form.

#### **Activities 5A and 5B: Evaluation of Capacity Against Program Requirements**

##### Activity 5A: Review Historical Capacity Related SSOs Downstream of SCR Connection

Review the recorded SSO occurrences over the time period defined in the County's Sanitary Sewer Capacity Evaluation Program and determine the number and location of downstream capacity related SSOs. Do not include SSOs attributed exclusively to maintenance issues such as FOG, debris, roots, etc. in the review. Do not include SSOs where subsequent system or operational improvements have been completed to eliminate a repeat capacity related SSO occurrence. Do not include SSOs unless the SSOs have the potential to occur again under normal annual dry and wet weather flow conditions.

**Commented [A9]:** Given the County's track record of under reporting and incorrect recording of SSOs, the EPA/EPD are uncomfortable with this entire provision/Activity as written. This does not comply with the terms of the CD, because past capacity related SSOs are clear evidence that there is not adequate capacity.

##### Activity 5B: Perform Hydraulic Analysis of Applicant's Flow Under Program Conditions

Hydraulic analysis of the impact of the applicant's design peak flow contribution shall be completed using the County's hydraulic model. The hydraulic analysis shall include each of the following flow conditions:

- Sewer system flow conditions as defined by County's Sanitary Sewer Capacity Evaluation Program, and
- Peak flow contributions from all PENDING, CONDITIONALLY APPROVED, and APPROVED SCR's in the County's Sewer System Capacity Allotment tracking form since the last system model flow calibration, and
- Peak flow contributions from the applicant's SCR.

**Commented [A10]:** If a project has been completed and you are still having SSOs, then likely something needs additional examination/scrutiny. To not include this type SSO is to undermine the integrity of any analysis carried out.

**Commented [A11]:** How would the reviewer determine that this particular SSO will not occur in the future? This sort of prediction is what a dynamic hydraulic model provides... something the county does not have currently.

Capacity Certification shall comply with the County's Sanitary Sewer Capacity Evaluation Program that identifies the system flow conditions and levels of service to be assessed for determination of sewer capacity.

#### **Decision B: Determine Whether Applicant's SCR Meets Capacity Program Requirements**

If the design peak flow provided in the SCR meets the County's Sanitary Sewer Capacity Evaluation Program requirements as referenced in Activities 5A and 5B above, proceed to Activity 6: County Sends Letter Approving Sewer Capacity Request.

Applications that do not meet the capacity program requirements defined under Activities 5A and 5B shall proceed to Activities 5C and 5D below.

#### **Activities 5C and 5D: Verification of Asset and Flow Information**

##### Activity 5C: Confirm Existing Asset Information

Sewer system asset information including pipe diameters, pipe materials, pipe slopes, and manhole depths impacts the results of the hydraulic analysis described in Activity 5B. As a result, should the hydraulic analysis determine that the SCR does not meet the capacity compliance program limits, the following GIS items shall require further field verification by the County:

- Instances where larger diameter pipes connect to downstream smaller diameter pipes; or
- Instances of reverse grade pipe slopes; or
- Shallow slope (less than minimum standard grade) pipes that are inconsistent with slopes of adjacent pipes; or
- Shallow manholes that are inconsistent with manhole depths of adjacent manholes.

Activity 5D: Validate System Flows with Temporary Flow Data Where Necessary

Temporary flow meters may be installed by the County downstream of the applicant's proposed flow connection point(s) to help validate model results or when the County believes additional flow monitoring is needed to better determine existing conditions from the proposed flow connection to the collection system's outlet.

The flow meters should be installed along the conveyance route at critical hydraulic locations downstream of the proposed flow connection and where the flow monitoring personnel determine hydraulics are suitable for accurate measurement. Engineering judgment shall be used to determine whether sufficient flow data has been collected to assess whether acceptable capacity is available to meet the capacity program requirements. Flow monitoring data from a prior capacity request evaluation or a prior flow study may also be used to assess capacity should engineering judgment determine that the location and time period of the flow monitoring is appropriate and sufficient to certify capacity. The flow data collected and basis for the determination of acceptable capacity shall be fully documented and recorded with the capacity certification.

**Decision C: Determine Whether Asset Information Changes to the Hydraulic Model are Required**

Asset information changes resulting from field verifications identified under Activity 5C above shall be incorporated into the model and the hydraulic analysis shall be re-performed in accordance with Activities 5A and 5B above.

If the updated hydraulic analysis results in compliance with the County's Sanitary Sewer Capacity Evaluation Program, then proceed to Activity 6: County Sends Letter Approving Sewer Capacity Request; otherwise proceed to Decision E: Determine Applicant's Options to Achieve Capacity Compliance.

**Decision D: Determine Whether Temporary Flow Data Supports Assessment of Acceptable Capacity**

If, based on engineering judgment, temporary flow data supports the certification of acceptable capacity, then proceed to Activity 6: County Sends Letter Approving Sewer Capacity Request; otherwise proceed to Decision E: Determine Applicant's Options to Achieve Capacity Compliance.

**Activity 6: County Sends Letter Approving Sewer Capacity Request**

Upon certification by the Capacity Certification Engineer and approval by the Responsible Party of the County, the County shall send a letter to the applicant approving sewer capacity. Additionally, the application status shall be changed from PENDING to APPROVED in the Sewer System Capacity Allotment Tracking form.

**Decision E: Determine Applicant's Options to Achieve Capacity Compliance**

Subtask E1: Determine Capacity Improvement Options Available to the Applicant

The County shall determine whether capacity improvements that will meet capacity program requirements are available for completion by the applicant.

**Commented [A12]:** The capacity certification must be conducted by a Georgia PE. Temporary flow monitoring is not a mechanism to override PE certification.

**Commented [A13]:** Is this sentence intended to read ...if the updated model no longer indicates capacity limitations...?

Subtask E2: Determine Suitability of Other Alternative Capacity Solutions

The applicant may submit alternative solutions, such as the design and construction of on-site storage system, to remedy capacity limitations. Alternative solutions proposed by the applicant must be designed and signed by a professional engineer registered in the State of Georgia. The County will determine the suitability of any alternate capacity solutions proposed by an applicant.

Subtask E3: Determine Capacity Improvement Options Scheduled for Completion by the County

The County shall determine whether capacity improvements that will meet capacity program requirements are scheduled for completion by the County.

**Activity 7: Send Notice to Applicant with Available Options**

If any of the capacity compliance options described in Subtasks E1-E3 above are determined to be available then the County shall send a notice to the applicant identifying the available options. The notice shall indicate a deadline for which the applicant must return a Sewer Action Plan (SAP) in order to achieve capacity certification.

If none of the capacity options described in Subtasks E1-E3 above are determined to be available then proceed to Activity 10: County Sends Letter Denying Application. Additionally, the application status shall be changed from PENDING to DENIED in the Sewer System Capacity Allotment tracking form.

**Decision F and Activity 8: Applicant Agrees to Participate in Capacity Compliance Options and Submits Sewer Action Plan (SAP)**

The applicant shall determine whether or not to participate in the capacity compliance options provided. If so, the applicant shall submit a SAP identifying the selected capacity compliance option.

**Decision G: County Determines Whether Sewer Action Plan (SAP) is Acceptable**

If the County has not received a SAP from the applicant by the deadline presented in the County's notice identifying the available capacity compliance options, then proceed to Activity 10: Send Letter Denying Application. Additionally, change the status of the application from PENDING to DENIED in the Sewer System Capacity Allotment tracking form.

The County shall review the applicant's SAP to determine acceptability. The design of alternative solutions proposed by the applicant per Subtask E2 above shall be reviewed by the Capacity Certification Engineer to determine whether the design complies with the County's engineering standards. Upon acceptance by the Capacity Certification Engineer, the Consent Decree Administrator shall determine whether the design complies with the Consent Decree, County's policies, best practices, and goals. If the SAP is determined to be unacceptable, the County shall return a letter to the applicant documenting the changes required to allow for conditional approval of the capacity request. If the SAP is determined to be acceptable, then proceed to Activity 9: County Issues Conditional Approval of Capacity Request.

The applicant may appeal the County's denial of the applicant's SAP. In such cases, the County's Chief Operating Officer for Infrastructure shall determine whether the facts presented in the appeal meets the requirements of the Consent Decree and merits approval of the SAP.

**Activity 9: County Issues Conditional Approval of Capacity Request**

The County shall submit a letter to the applicant granting conditional certification of the capacity request. The letter shall identify that the applicant must present proof of completion of the capacity compliance options required by the applicant as identified in their approved SAP in order to initiate flow discharge to the County's

**Commented [A14]:** The County should reserve the final say in the approval of any alternate capacity solutions recommended by an applicant.

**Commented [A15]:** The County's engineer must certify that he system has adequate capacity under all expected flow conditions, and that proper implementation and operation can be verified.

**Commented [A16]:** The CD requires PE certification for all new/increased flows. Regardless of the County's Chief Operating Officer for Infrastructure determination in an appeal, no connection may occur without certification by the PE that there is adequate capacity.

**Commented [A17]:** The county engineer needs to buy off on this proof of completion in order to certify capacity.

sewer system. Additionally, the application shall be changed from PENDING to CONDITIONAL APPROVAL in the Sewer System Capacity Allotment tracking form.

#### Activity 10: County Sends Letter Denying Application

The County shall submit a letter to the applicant denying the application for capacity. The letter shall identify the reason for denial of the request. Additionally, the application shall be changed from PENDING to DENIED in the Sewer System Capacity Allotment tracking form.

### VI. REFERENCES

- Clean Water Act Consent Decree 1:10cv 4039-WSD
- System-Wide Hydraulic Model, Department of Watershed Management (DWM) Capacity, Management, Operations and Maintenance (CMOM) Program, Current version
- System-Wide Flow and Rainfall Monitoring Program, DWM CMOM Program, Current Version
- Infrastructure Acquisitions Program, DWM CMOM Program, Current Version
- “Potable Water Main, Gravity Sanitary Sewer, and Sanitary Sewer and Force Main Design Standards”, Current version
- DeKalb County Code of Ordinances, Chapter 24 “Water, Sewers and Sewage Disposal”, Current Version
- Capacity Allotment Program Coordination Procedure

### VII. DEFINITIONS

- CMOM – Capacity, Management, Operations, and Maintenance
- DWM – DeKalb County Department of Watershed Management
- FOG – Fats, Oils, and Greases
- GIS – DWM Geographic Information System
- I/I – Infiltration and Inflow
- P&D – DWM Planning and Development
- SAP – Sewer Action Plan
- SCR – Sewer Capacity Evaluation Request
- SOP – Standard Operating Procedure
- SSO – Sanitary Sewer Overflow
- WCTS – Wastewater Collection and Transmission System

- General Comments:

- Activity 5A & 5B needs to be revised to make clear that approval in Decision B will only occur when the reviews in Activity 5A and Activity 5B each support a determination that there is adequate collection and transmission capacity in the receiving portions of the WCTS. If either Activity 5A or Activity 5B reveals that there may be a lack of capacity, then proceed to Activity 5C.
- Activity 6 needs to be revised to make it clear that all approvals (and conditional approvals) must have certification by a PE as well as thorough documentation of the basis for the approval. Certification should include a certification statement from the PE as to what they are certifying (adequate

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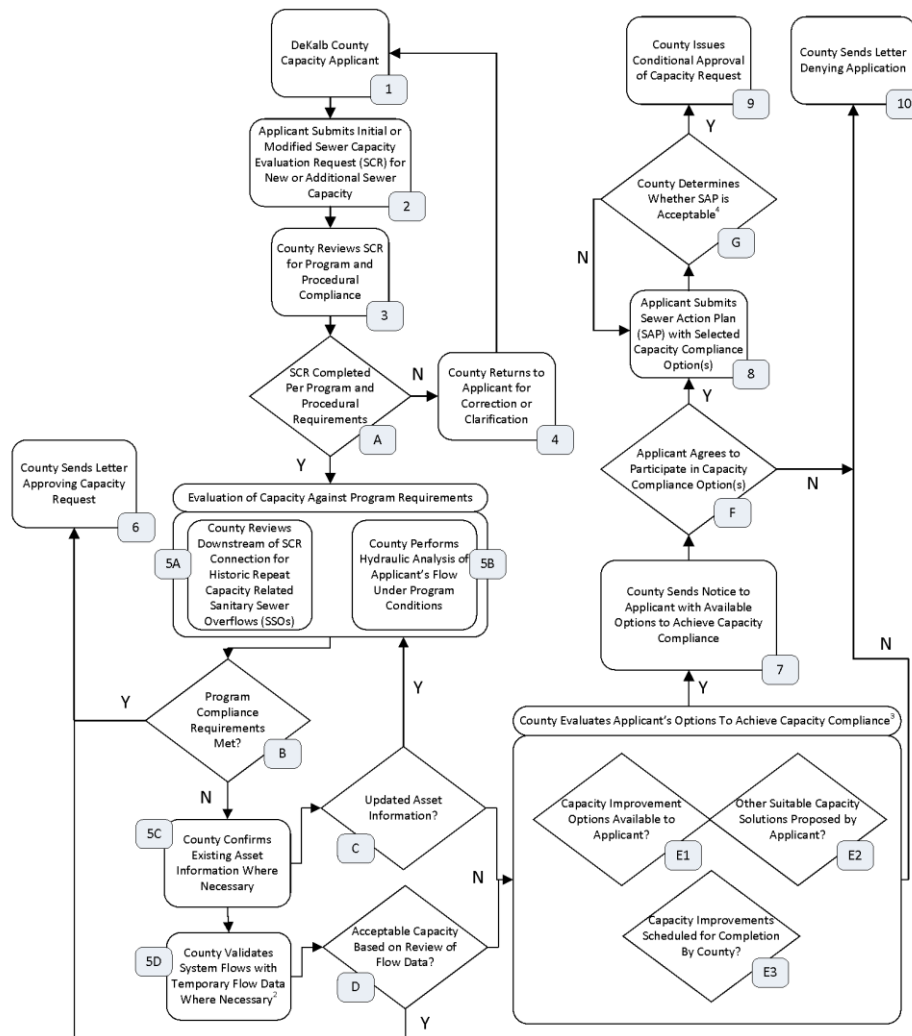
actual capacity) and that there is sufficient documentation to support the decision, such as:

I certify that the receiving portions of the WCTS have adequate collection and transmission capacity and the applicable WWTF has adequate treatment capacity for the proposed new sewer service connection or increase in flow from an existing service connection. I also certify that there is adequate documentation to support this conclusion and that a reasonable third party professional engineer would reach the same conclusion.

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## VIII. Flowchart Depicting Sewer Capacity Protocol

Interim Sanitary Sewer Capacity Protocol Flow Chart<sup>1</sup>

1 – Reference the Sewer System Capacity Certification Standard Operating Procedures and the Sanitary Sewer Capacity Evaluation Program for further information.  
 2 – Temporary flow meters may be installed regardless of whether Capacity Evaluation Program requirements have been met when the County believes additional flow monitoring is needed to better determine existing conditions.  
 3 – County shall perform hydraulic analysis of capacity improvement options under program conditions to determine whether options are sufficient for applicant to achieve capacity compliance.  
 4 – The applicant may appeal the County's decision to deny the applicant's SAP. Appeals shall be adjudicated by the County's Chief Operating Officer for Infrastructure.  
 Legend – N = No; Y = Yes; Diamond = Decision; Rectangle = Activity

12-15-2017